

Roundup

Lyndon B. Johnson Space Center

March | 2011

Solving unsolved (interstellar) mysteries

This NASA Hubble Space Telescope image captures the chaotic activity atop a threelight-year-tall pillar of gas and dust that is being eaten away by the brilliant light from nearby



Dextre, the Canadian Space Agency's robotic "handyman," is featured in this image by an Expedition 26 crew member aboard the International Space Station on Feb. 3. Dextre completed its first real job since the robot passed its final exam last December, unpacking two critical pieces of equipment delivered by the unpiloted Japanese Kounotori2 H-II Transfer Vehicle spacecraft.

Guest Column

are a mobile workforce. We take our laptops home and our BlackBerrys or iPhones everywhere (but never use them while driving ...). On average, about 20 of Johnson Space Center's mobile devices are lost or stolen each year, and this is a growing trend as we get more and more devices. When we lose a smartphone or a laptop, we are losing more than just a piece of hardware—we jeopardize all of the content on that device, including protected information such as personal identification, proprietary and procurement information and export-controlled data.

There are a few things you can do—and must do—to reduce the chance of loss or theft of JSC's information:

Keep your devices in your physical possession at all times, if possible.

If not, use good judgment to protect them:

- When you travel, use the room safe if you must leave your devices in your hotel.
- If you must leave your devices in your car, put them in the trunk prior to arriving at your destination. This will prevent any potential thieves from seeing that you put something valuable in the trunk after you get there.
- Label your devices with distinguishing marks. Especially in airport security, this makes it easier for you to keep track of your devices. (By the way, don't label the system with NASA logos. This just makes your system, and you, more of a target.)
- Keep the data encrypted. If you need an Entrust PKI certificate, just call the Information Resources Directorate Customer Support Center at 281-244-6367, option 2.
- Keep valuable data off your mobile devices and on a central server. Don't forget to back it up. Most mobile device losses and thefts can be prevented by being aware of your surroundings and being diligent. For more information about how to better protect your systems and data, contact your Organizational Computer Security Official (OCSO). A list of OCSOs can be found at: http://ird.jsc.nasa.gov/ITSecurity/Lists/OCSO/ocsolist.aspx

Let's keep JSC's information safe.

Larry Sweet, Director Information Resources Directorate

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Museum opens in Hemphill to honor Columbia and space exploration



Schools closed and visitors drove for many hours to commemorate closed and visitors drove for Space Shuttle Columbia and the STS-107 crew, as well as to celebrate the opening of the Patricia Huffman Smith Columbia Museum in Hemphill, Texas. The small East Texas town is where much of the Columbia debris came to rest and recovery efforts were led when the spacecraft broke apart reentering the Earth's atmosphere on Feb. 1, 2003.



NASA officials, relatives of the STS-107 crew and visitors attend the ribbon-cutting ceremony of the Patricia Huffman Smith Columbia Museum.

The 2,700-square-foot display area in the museum shares the story of space exploration through the lens of Columbia, showcasing photos of her crews and describing the missions they accomplished on large panels that adorn the museum. It also honors two community members who died in the recovery efforts.

"It is a wonderful testimony to what the community here did, to what Columbia was all about." said Gerry Schumann, NASA's lead incident commander during the recovery efforts.

Johnson Space Center team members worked closely with the Sabine County Columbia Memorial Committee to outfit the museum with shuttle models, replicas of experiments about Columbia and a variety of other displays.

The families of STS-107 crew members Commander Rick Husband; Pilot William McCool; Mission Specialists David Brown, Kalpana Chawla, Laurel Clark; Payload Commander Michael Anderson; and Payload Specialist Ilan Ramon, donated personal items from each astronaut. Evelyn Husband Thompson, the wife of Commander Husband, donated a contact lens case that her husband carried on Columbia. The case was recovered near Hemphill. Other families, including those of recovery effort pilot Buzz Mier and the Texas Forest Service's Charles Krenek (who were lost during recovery efforts) donated old photographs, flight suits, crew patches and gear owned by their loved ones.

The museum also includes a classroom that will be part of the agency's Digital Learning Network, where teachers and students will be able to interact with NASA for educational activities and take advantage of the agency's resources that will help advance curiosity and understanding about space.

"This tribute will stand as an encouragement to the youth of this community and our state to learn more about space and hopefully steer them to study science, technology, engineering and math," said JSC Director Mike Coats, "Hopefully spaceflight will be a part of their future."

At a memorial service and ribbon-cutting ceremony, before visitors entered the museum, NASA officials from around the agency and Hemphill community members reflected upon the bonds built during the recovery efforts.

"No one in our community knew what to expect," said Hemphill City Manager Don Iles. "No one knew that thousands of volunteers and searchers representing hundreds of government agencies would soon descend upon our town. I'll never forget that in the midst of this tragedy, our town did the right thing."

General Howell, JSC director at the time of the tragedy, also expressed his gratitude to the Hemphill community at the museum opening.

"After the Columbia tragedy happened, the Johnson Space Center, like all of you, went through some tough, tough times," Howell said. "Not only did we lose seven dear friends and teammates, but we were under an almost daily barrage of criticism from the media and second guessers. However, when we came up to the Piney Woods of Hemphill in East Texas, all we heard from you was, 'What can we do to help?' And you came through every, every time."



U.S. Representative Louie Gohmert (right) and another visitor speak at the opening of the Columbia museum in Hemphill, Texas.

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The Next Generation Planning System

readies for debut



By Catherine E. Williams

has been said that great minds think alike, so it may come as no surprise that Johnson Space Center's Mission Operations Directorate (MOD), the Jet Propulsion Laboratory (JPL) and Ames Research Center (ARC) have historically used similar methods to plan and execute a mission to space. The JSC MOD Operations and Planning team worked with other NASA centers to merge the expertise and planning tools used on missions such as the Mars Exploration Rover with that of our human spaceflight missions on the International

Control Center in Houston, but also to control centers at Marshall Space Flight Center and internationally to the Russian Federal Space Agency, European Space Agency and Japanese Aerospace Exploration Agency. "It will also introduce potential crew autonomy, so there are some (plans) the crew could have more flexibility with."

The NGPS has seen some early success in analog environments such as Desert Research and Technology Studies. This year the system will also be test driven during a NASA Extreme Environment Mission



Space Station. The result was the development of the Next Generation Planning System (NGPS).

"The existing legacy system was developed in the early '90s, and technology has gone through some major innovation since then on the software side," said Tim Hall, group lead of the Mission Planning Software and Integration team. "We could see (that) the space station and future exploration programs needed to have a more scalable tool that could be deployed in different environments ... something that could be adjusted to those different scenarios."

JSC began collaborating with JPL and ARC in 2006 to leverage some of their expertise in planning robotic missions. With the success of smaller projects that shared data between existing planning tools, MOD decided to launch a full-scale NGPS project to create software that would be used to orchestrate station missions—and futuristic missions not yet conceived.

Currently, planning a station mission involves 15 different applications that aren't readily compatible in sharing data.

"It should introduce tremendous efficiency on the ground for the planning teams—for long-range planning as well as what we call execution planning, by making the system share the information better," Hall said. These efficiencies will extend far beyond the Mission Operations mission. The major rollout for NGPS will occur this month or next, when it will appear on International Space Station planning consoles in the form of an advanced scheduling tool dubbed "Score." Named for a composer's score, the software will manage changes to station plans in real-time while also interfacing with legacy tools still in use.

It wasn't long ago that the space station team thought they would be benefiting from the latest Mars Science Laboratory (MSL) mission planning software experience. (MSL uses a planning system based on the same core software as NGPS—but the mission slipped 24 months upon missing its narrow launch window to the red planet.) Meanwhile, MOD has continued to forge ahead in implementing the NGPS while MSL waited out the Mars mission launch window delay—so it is now the station team that will be passing along their proficiency and contributions to the core planning capability back to MSL.

"We've gone from the MER missions back to human spaceflight and now back to the Mars missions," Hall said. "It's just proving our original concept. We had hoped to make a planning system that could be used with very little modifications to it for either any planetary or any human spaceflight mission—a system for all NASA missions."

Office of Equal Opportunity and Diversity offers guidance to Johnson Space Center team members



By Neesha Hosein

Office of Equal Opportunity and Diversity (OEOD) assists the Johnson Space Center workforce in maintaining a steady balance of equality and diversity. OEOD aspires to help resolve people problems before they escalate by:

- Educating the JSC workforce on Equal Employment Opportunity (EEO) laws, policies and processes.
- Ensuring EEO is provided to all employees and job applicants. regardless of their race, religion, color, sex, national origin, age, sexual orientation, gender identity, status as a parent or
- · Providing neutral EEO counseling.

PHOTO/OFFICE OF EQUAL OPPORTUNITY AND DIVERSITY.

- Facilitating the resolution of issues through Alternative Dispute Resolution.
- Promoting a working environment that respects and values the diverse expertise of the entire JSC workforce.

OEOD team members (right to left): Janelle Holt, EEO counselor and Disability Program manager; Sherry Hatcher, EEO counselor, Complaints manager; Deborah Urbankski, OEOD director; Ralph Anderson, deputy director, OEOD: Deidre Owens, graduate intern: Jessica Attocknie, EEO counselor, Special Emphasis Program manager. Not pictured: Scott J. Collins, administrative assistant; and Israel LaCour, Career Exploration Program intern.

"There's a lot we do as a group," said OEOD Director Deborah Urbanski. "We help resolve people problems before they become legal problems. Some of them are compliance and some of them are proactive prevention."

The first order of business for the OEOD is to determine whether a complaint belongs in their hands. Many of the issues that come through their door are initially handled by Sherry Hatcher, complaints manager and EEO counselor.

"People come in and, if for some reason feel like they have not been treated fairly, then I make sure that I explain all the rights and responsibilities," Hatcher said. "Sometimes we find that our office isn't the best place for them to pursue their complaint. We try to help them decide (where) to go. Once we determine that our office is where they ought to be, I assign a counselor. We actually have four certified EEO counselors in the office, so one of them will take the complaint."

Aside from conflict resolution and mediation, OEOD has also helped JSC team members by making accommodations for those with physical challenges, such as providing parking lot and wheelchair access and restroom conveniences and safety.

"During this fiscal year, our office plans to recognize special awareness months by hosting various activities and speaking engagements," said Jessica Atocknie, EEO counselor and Special Emphasis Program manager. "So far, we have celebrated National Hispanic Heritage Month and Black History Month. Our plan is to also host an event this month for Women's History. It has been over 10 years since these special awareness months have been recognized. The feedback from JSC employees has been very positive and the events very well received and attended."

For more information about the OEOD, visit their website: http://www.nasa.gov/offices/oeod/



Deborah Urbanski Director of the **OEOD**

Urbanski brought with her a wealth of knowledge and experience to JSC when she became the director of the OEOD effective Aug. 2, 2009.

She holds a Bachelor of Arts in government from the University of Texas (1983) and a Doctorate of Jurisprudence from South Texas College of Law (1992).

Prior to her career at JSC, Urbanski held the title of supervisory attorney/Alternative Dispute Resolution coordinator for 10 years. She earned several significant recognitions that include: Chair's Organizational Performance Award for Low-Wage Earner Outreach (1999); Chair's Organizational Award (2002); Chair's Opportunity to Reward Excellence Award (CORE) (2004); and CORE Award for outstanding contributions in support of the EEO Commission's Five Point Plan (2005), among various additional government annual time-off and monetary awards for outstanding performance and exemplary service.

Solving unsolved (interstellar) mysteries



By Catherine E. Williams

Scientists understand enough to know that there is still a lot we don't know about the universe. Our galaxy is an unforgiving environment, reluctant to reveal all its secrets. But with specialized instruments and research missions. NASA is getting closer to unveiling one of the greatest history stories imaginable. Johnson Space Center is on the forefront of these discoveries—discoveries that ironically begin with objects as nondescript as dust.

But not just any dust. Stardust.

"This beautiful stardust is part of what our solar system is actually made from—earlier generations of dead stars," said Scott Messenger, a space scientist with an astrophysics background in the Astromaterials Research and Exploration Science (ARES) Directorate. "A lot of what we do in this lab is look for little pieces of that ancient stardust. We can identify stardust grains from their exotic isotopic compositions."

NASA/PH0T0 JSC2005E01062

A view from NASA's WB-57 aircraft. These high-altitude planes allow the agency to cost-effectively collect interstellar particles in the Earth's stratosphere.

A Transmission Electron Microscope (TEM) and NanoSIMS 50 ion microprobe decode these primitive meteorites and interplanetary dust particles to find even smaller stardust grains to pull out and study.

"The great thing about (NanoSIMS) is that it's extremely sensitive and has very good space resolution, so we can look at very, very small things," Messenger said. "And it turns out stardust grains are very small. It's like looking for a needle in a haystack, and once in a while we find something very special."

This combination of instruments led to a remarkable discovery a little more than five years ago—a stardust grain very different from stardust grains ever found before. It turns out that speck originated from a supernova—a star that magnificently self destructs at the end of its lifespan.

"Here we have an interesting grain with a very bizarre isotopic composition—that in itself is new science," said Lindsay Keller, a planetary scientist within the ARES Directorate. By using the TEM to analyze that sample, "you can tell what the chemical composition of that grain is, you can look at its crystal structure, how the atoms are arranged, and that tells you a lot about conditions and the environment it formed in. It's a really nice detective story."

But where is a scientist to find such mini treasures? Surprisingly not far. Some of the stardust grains are found in cometary dust particles swept up by the Earth.

"That particle was collected in the Earth's stratosphere," Keller said. Samples of stratospheric dust are collected by NASA high-altitude aircraft such as the WB-57 planes that fly out of Ellington Field.

"It's an incredible resource," Keller said. "The fact that you can look at a particle that's one-tenth of the diameter of a human hair and learn about something that happened on a comet 4½ billion years ago is pretty neat."

Each sample contains building blocks of the universe, because what is picked up has been mashed together from many sources through interstellar transit. One larger grain can contain tens of thousands of tinier particles.



Jim Harris (left) and Ron Seders, with Lockheed Martin, prepare the Stardust sample return capsule in the Space-Exposed Hardware Lab. The Stardust spacecraft returned the world's first samples from a known comet. During the seven-year journey in space, a tennis racket-like, aerogellined collector was extended to capture the particles as the spacecraft flew within 150 miles of comet Wild 2 in January 2004.

"Some particles here came from exploding stars, some came from stars like our sun that have died, some came from interstellar clouds, some from the inner solar system, some from the outer solar system, some from comet impacts ... so this little thing is sampling a wide variety of the galaxy," Messenger said. "What we're doing is taking it apart, grain by grain, and figuring out what came from where and what went on in those different parts of the galaxy.'

And even the samples we are fortunate to have in our possession.

"The problem is yes, these stars explode and supernovas generate a lot of dust, but that gets thrown out into interstellar space, and all kinds of bad things happen to dust grains," Keller said. "There are supernova shocks, radiation ... so there's a winnowing out process. These are the lucky survivors of all that processing."

New discoveries are made possible by coupling the most powerful TEM in the world with the most powerful ion probe.

"When we bring those together with the right sample, that's what allows us to figure things out," Messenger said.

Ten years ago, that kind of work wasn't even possible because the equipment did not exist to perform the work. But NASA's Stardust mission propelled the agency to invest in the instruments that bring us closer to unlocking the universe's secrets. Messenger and Keller took advantage of these assets to resolve a longstanding problem in cosmochemistry—where were the missing interstellar silicate grains?

"People had been studying stardust grains for about 15 years," Messenger said. "Astronomers knew these minerals existed in space, but mostly what astronomers see when they look around the galaxy is silicate dust. This was really a head-scratcher for the cosmochemistry community. The only possible saving grace in all of this could be that the silicate grains were just too small to measure, so NASA made a huge commitment to invest in the NanoSIMS."

It was revolutionary to the study of interstellar grains.

"Lo and behold, the very first particle I measured ..." Messenger said. "You don't have to understand anything to know that that is a special little grain—the first pre-solar silicate grain ever found." This work was later published in Science in 2003.



Mike Zolensky (left), Stardust curator and co-investigator, and Donald Brownlee, principal investigator with the University of Washington, study Stardust material after its canister is opened in a laboratory at JSC.

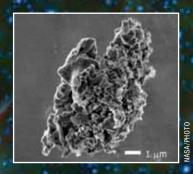
"What's fascinating is you are looking at dust grains that are older than the sun," Keller said.

The data this team is generating with the help of newer generation machines is helping scientists and astronomers learn about the origins of the universe.

"The Hubble (Space Telescope) sees farther, better, deeper and with better resolution looking outward," Keller said. "Looking downward, we're doing the same thing.'

From the discovery of the most common kind of dust floating in space that create planets and silicates, to the breakthrough uncovering of an extraordinary supernova olivine from cometary dust, NASA continues to reveal chapters of our solar system's story. Predicting how that story will end is next.

"I guess the thing that really strikes me is the supernova particle ... it's much smaller than a single cell in your body," Messenger said. "And we know more about certain aspects of how stars explode by studying this grain than astronomers can determine using the best telescopes in the world. We get really focused on the details, but when you step back and think—my goodness, we're actually (seeing) how stars evolve and explode based on this little thing that you can't even see on an optical microscope. Just the audacity of scale is kind of mind-bending."



This is a scanning electron microscope image of a probable cometary dust particle collected in the Earth's stratosphere. Such grains are collections of thousands of grains from different origins, including stardust. A typical cometary dust particle size is 10 to 100 micrometers, while a typical stardust grain size is 50 to 500 nanometers.



Planetary nebulae like the Helix are sculpted late in a sun-like star's life by a torrential gush of gases escaping from the dying star. Based on the nebula's distance of 650 light-years, its angular size corresponds to a huge ring with a diameter of nearly three light-years. That's approximately three-quarters of the distance between our sun and the nearest star.

The Helix Nebula is a popular target of amateur astronomers and can be seen with binoculars as a ghostly, greenish cloud in the constellation Aquarius. Larger amateur telescopes can resolve the ring-shaped nebula, but only the largest ground-based telescopes can resolve the radial streaks.

Innovation 2011

Coming soon to the Johnson Space Center mall near you

Innovation 2011 is one of the showcase events of the Johnson Space Center Inclusion and Innovation (I&I) Council. It will be held this year on May 4 from 9 a.m. to 4:30 p.m. on the JSC mall and surrounding areas. The Innovation 2011 team believes everyone will find something at this event that will make his or her job easier, faster or more intuitive. Innovation 2011 is a stand-down event for all civil servants at JSC, and contractor participation is encouraged as both attendees and exhibitors. (Contractor employees should coordinate with their company management for further details.)

JSC is open to new ways of doing business and willing to take risks looking at new ideas—the essence of innovation. This year will feature Vinton Cerf, vice president of Google and "father of the Internet," as the keynote speaker. Marina Gorbis, executive director of The Institute of the Future, is slated as the midday speaker.

Innovation 2011 will also feature Steve Robbins in two very special presentations on I&I. In the afternoon, JSC Director Mike Coats and several senior staff members will host a panel discussion open to the center in Building 2 to inspire us to perform I&I activities within our home organizations.

Like last year, exhibits from organizations and many contractors around the center will highlight our innovations and process improvements, especially those that may not be well known to the entire JSC community. These exhibits encourage innovation in all aspects of our business. Exhibitors will display a process, product, hardware or prototype—or bring a great idea illustrated using a storyboard—showing just how many innovative things are going on right here.

Innovation 2011 will bring back the rap forum presentations initiated last year. These forums consist of an open discussion on a pre-selected topic with a Subject Matter Expert (SME). This year, there are three tracks in the rap forum category, including panel discussions and the Challenge Think Tank as new tracks. The discussions will feature an interactive panel of SMEs focusing on open dialogue with question-and-answer sessions involving the participants. The Challenge Think Tank will allow an individual or group of SME(s) to bring a "problem" to the session and solicit solutions in an open brainstorming effort.

Other developments include the use of social media tools to communicate live at the events. Expect to see a "flash mob" sometime that day, as well as a Student Teacher Outreach Mentorship Program Lego-building competition.

Innovation 2011 is intended to be a catalyst for more innovation at JSC, and you are the key. The more you participate, the more it will help foster creativity and innovative thinking. The goal is to move JSC team members outside their normal circles to be exposed to new ideas, issues and perspectives.

Stay updated with what is happening by visiting the Innovation 2011 website: innovation2011.jsc.nasa.gov

The schedule of events will be released on both the website and a special flier the week before the event, allowing employees to plot out their own innovation experience.

Questions? E-mail them to innovation2011@nasa.gov, or contact James McClellan at 281-244-5678.



Innovation 2011 will once again take place on the JSC mall area on May 4.



Join fellow team members in collaborating and sharing new ideas at Innovation 2011.

WORF aids in scientific research

and education



By Neesha Hosein

Window Observational Research Facility (WORF) is the International Space Station's latest innovation, located on the nadir (Earth-facing) side of the U.S. Destiny laboratory module. The WORF provides new capabilities for scientific and commercial payloads and will be a valuable resource for public outreach and educational opportunities for Earth sciences.



Japan Aerospace Exploration Agency astronaut Naoko Yamazaki, STS-131 mission specialist, works with the WORF in the Destiny laboratory of the International Space Station while Discovery remains docked with the station. WORF will provide cameras, multispectral and hyperspectral scanners, camcorders and other instruments to capture Earth imagery through Destiny's nadir window.

Images from space serve numerous purposes. They can be used to study global climates, including land and sea formations. This is also a helpful tool for performing damage and health assessments of crops and weather, in turn making WORF a merit to scientific research.

The lab window features the highest quality optics ever flown on a human-occupied spacecraft. The WORF allows viewing of 39.5 degrees forward along the axis of the station, 32.2 degrees aft and 79.1 degrees from port to starboard. Special sensors can also provide important data about fleeting atmospheric and geologic phenomena such as hurricanes and volcanic eruptions. The sensors are useful tools in future endeavors because they can also operate as a test bed in data collection for new sensor technology development.

The WORF design uses the existing Expedite the Processing of Experiments to Space Station Rack hardware, which includes a rack interface controller box for power and data connection, avionics air assembly fan for air circulation within the rack, rack fire detection and appropriate avionics to communicate with the station data network.

Former astronaut Mario Runco was part of the design and development teams for the Destiny window and WORF. Runco now serves as NASA's lead for Spacecraft Window Optics and Window/ WORF utilization at Johnson Space Center.

"With the WORF finally in place, we can now for the first time make full use of the investment we made in having an optical quality window onboard the station for Earth science and observation," Runco said in a recent press release.

The WORF provides protection for the interior portion of the lab window and controls stray light exchange between this area and the external station environment. By providing attachments for sensors such as with cameras, multispectral and hyperspectral scanners, camcorders and other instruments, the WORF will maximize the use of the lab window by capturing imagery of Earth and space.



A test photo of British Columbia's snow-capped west coast mountains is the first official image taken from the station's new WORF. The test photo is of an area of British Columbia, Canada, just north of Vancouver Island.

The image was taken to test the functionality of the control computer and camera associated with EarthKAM, an educational outreach project that allows Earthbound middle school students to take pictures of our home planet from the unique perspective of the space station, 220 miles above the Earth's surface, WORF was delivered to the station on the STS-131 mission of Space Shuttle Discovery in April 2010.

NASA/PHOTO 511609MAIN CCFID 9362 2011017204658 IMAGE2 FUL

Spotlight Derek Rutovic

T-38 Project Engineer

Q: What is your best memory at NASA or JSC?

Having the opportunity to work on a major design project to upgrade the T-38 and see it through from the drawing board to a production line with the team of engineers and maintenance personnel that we had. The work was interesting, and most of the time, the people even more. I learned a lot about engineering design from the upgrade manager, David McMahon, and a lot about fabrication/production at our depot facility in El Paso, Texas.

Q: Favorite hobbies or interesting things you do away from the office?

Being with my wife/children tops the list. I enjoy flying privately, am working on my instrument rating and also contemplating building an RV-7A.

Q: What was your first job (not necessarily at NASA, but ever)?

Pouring and finishing concrete slabs for a local construction company back home in Muncie, Ind.

Q: If you could trade places with any other person for a week, famous or obscure, living or dead, real or fictional, who would it be?

Never really wanted to trade places with anybody. However, it would have been neat to be a young engineer back in the 1940s to 1960s, when aviation and aerospace technology were advancing like a wildfire.

Q: What would people be surprised to know about you?

I was a co-op for five tours before transitioning to full-time, but I almost never got an interview for a JSC co-op position at Purdue. I had to get in line early in the morning, first come, first served, for a limited number of interview slots. The kid in line behind me wanted a JSC interview, but I was the final slot. He came in five minutes after me.

Q: What is your favorite quote or motto?

"Far better is it to dare mighty things, to win glorious triumphs, even though checked by failure ... than to rank with those poor spirits who neither enjoy much nor suffer much, because they live in a gray twilight that knows not victory nor defeat." —Theodore Roosevelt

Q: What would we find in your refrigerator right now?

Leftovers. They seem to multiply in our refrigerator and never go away.

Q: Last good book or article you read?

A: I'm not much of a reader. I am reading through the *Bible* this year and have been perusing my RV-7A construction plans.

Q: Favorite travel destination (or place you'd love to go if given the opportunity)?

A: I love to travel to different and new places, but the two places that I would enjoy returning to are Big Bend National Park and the Florida panhandle.



Did you know?

Rutovic recently won the Silver Power of One Award for his work at Johnson Space Center. Part of his award-winning write-up said, "As a traditional mechanical engineer, he worked tirelessly to educate himself in electrical engineering and software analysis so that he could identify software and hardware issues of importance to the astronauts and staff pilots, (and) then took action to deal with those issues."

To find out more about Power of One, visit: http://powerofone.jsc. nasa.gov/

Q: Favorite TV show and why?

"House." The medical mysteries are interesting.

Q: What is your most prized possession?

My thoughts, if they could be considered a "possession."

Q: Describe yourself in three words.

A: Blessed beyond belief.

Q: What does the term "NASA Family" mean to you?

A: I have thoroughly enjoyed working with the people at Ellington Field, as well as our depot facility in El Paso, Texas. It has always felt like more than just a job for me. The friendships gained over the years are an important part of me, and this was made all the more evident to me two years ago during a serious illness.

WANTED!

Do you know a JSC colleague or team that does something extraordinary on or off the job? Whether it's a unique skill, interesting work, special professional accomplishment, remarkable second career, hobby or volunteerism, your nominee(s) may deserve the spotlight!

The Roundup shines the light on one special person or team each month, chosen from a cross section of the JSC workforce. To suggest "Spotlight" candidates, send your nomination to the JSC Roundup Office mailbox at jsc-roundup@mail.nasa.gov. Please include contact information and a brief description of why your nominee(s) should be considered.

SA/HJARNETT JSC2010E196571

Center **Scoop**



National African-American/Black **History Month**

Johnson Space Center Office of Equal Opportunity and Diversity, the Employee Assistance Program and the National Society of Black Engineers – Houston Space Chapter put on a special recognition event in honor of National African-American/ Black History Month on Feb. 16.

The Building 30 lobby featured art from the Black Heritage Gallery, Nigerian clothing by Kachi Designs and a book display by author and motivational speaker Marilyn Logan.

Later, Dr. David Garrison, associate professor and chair of physics at the University of Houston-Clear Lake, presented the topic "African-American Scientists and Engineers: Standing on the Shoulders of Giants."

The event capped off with Pearl Wright, president and founder of 4W Solutions, Inc., and Jeffrey L. Boney, founder and CEO of Texas Business Alliance, discussing "Black Economic Empowerment."



Directorate roll call

AD: The External Relations Office welcomed new Acting Director Mike Kincaid to the team. Kincaid comes to AD from the Office of the Chief Financial Officer, where he served as deputy director.

AH: We're proud of our senior leaders who have been recognized by external organizations: Mike Suffredini and the International Space Station Program team will receive the National Air & Space Museum's Current Achievement Trophy in April; Jeff Hanley will receive the National Space Club's Astronautics Engineer Award in April; and Steve Altemus will receive the Professional Engineers in Government's NASA winner for Federal Engineer of the Year later this month.

AK: On Feb. 23, as part of the storytelling program, Michael Kezirian chronicled the trials and tribulations that the orbiter team went through to quantify and mitigate risk of stress rupture of the aging Kevlaroverwrapped pressure vessels.

DA: The Mission Operations team worked with the station program to develop a plan to manage multiple commercial resupply vehicles simultaneously once the SpaceX Dragon and Orbital Cygnus vehicles begin making their first cargo delivery missions. The plan includes options for relocating vehicles to free up the best berthing ports for new arrivals.

EA: JSC Engineering will conduct testing of a vertical test bed vehicle for Innovation 2011 on May 4 in the field west of Building 14. The vehicle is an in-house design that builds on innovative partnerships established with Jacobs Engineering, Armadillo Aerospace and Draper Labs. It will serve as an integrated test platform for LOX-Methane engine development, advanced software development and the Autonomous Landing and Hazard Avoidance Technology suite of capabilities.

JA: Center Operations is currently in the construction phase of the utility tunnel flood mitigation project. This work will minimize water

infiltration into the tunnel system, improve water removal and upgrade flood protection of mission-critical facilities (Building 30 complex and Building 48).

KA: The Astromaterials Research and Exploration Science (ARES) Directorate hosted members of the Applied Physics Laboratory from the Johns Hopkins University to explore a partnership for the development of sample handling and acquisition hardware and for testing the crosscontamination between samples and the hardware. This work will tap into the state-of-the-art analytical instrumentation in ARES.

OA: In January and February, three resupply vehicles traveled to the space station. The Japanese Aerospace Exploration Agency's H-II Transfer Vehicle 2, the 41st Russian Progress and European Space Agency's Automated Transfer Vehicle 2 ferried crew supplies, fuel and experimental equipment to the orbiting laboratory.

SA: Space Life Sciences launched the NASA Human Health and Performance Center on Oct. 18. It currently has 70 members (some include: GE, Philips, Nike, University of Texas Medical Branch, MIT, Mozilla, and the National Institutes of Health, Federal Aviation Administration and U.S. Food and Drug Administration). See: http://nhhpc. nasa.gov

The first workshop, held Jan. 19 on "Open Collaboration - Strategies and Best Practices," attracted more than 100 attendees and resulted in six collaborative project proposals.

ZA: The Crew Module Ground Test Article structural assembly work was completed at the Michoud Assembly Facility in New Orleans. The crew module will leave Michoud en route to the Lockheed Martin Waterton facility in Denver for the thermal protection system installation, final outfitting and testing.

Roundup

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Space Week sneak peek



By Rachel Kraft

the end of March, educators, engineers, scientists and astronauts from Johnson Space Center will descend upon Austin and College Station, Texas, for Space Week—a week devoted to promoting NASA's message and sharing both the agency and center's educational, technological and economic advancements in Texas and around the country.

The Driven to Explore mobile trailer exhibit will visit College Station, where more than 800 students from the College Station Independent School District will be given the opportunity to learn about some of NASA's achievements in space exploration. The visit coincides with the students' participation in the six-week-long "Mission X: Train Like an Astronaut" challenge, in which students take part in exercises and other fitness and nutrition-related activities that simulate the strength and conditioning that astronauts need for their work in space. Texas A&M University students and community members will have the chance to learn about advancements made in spacesuits and other technologies during events at the George Bush Presidential Library and Museum.

The week's activities culminate on Space Day at the Texas Capitol, March 31. Interactive exhibits will highlight the International Space Station and pay tribute to the Space Shuttle Program, helping to inspire students to pursue science, technology, engineering and mathematics fields.

The Education office will share a plethora of interactive exhibitions designed to show students the skills needed to be an astronaut or work in aerospace. A pitch, yaw and roll activity will demonstrate robotics motions. Students will be able to build puzzles while wearing heavy gloves, simulating the difficulties of working in a spacesuit, and launch stomp rockets toward a target zone, calculating the angle needed to get the rockets to their mark. At the public event, visitors will be able to walk through space station models and learn about NASA's missions in space or meet an astronaut.

Space Day coincides with the meeting of the 82nd Texas Legislature, when the state's elected officials will also be able to learn about the benefits that NASA provides to the state.



JSC Deputy Director Ellen Ochoa and astronaut Michael Fossum meet with Governor Rick Perry during Space Day 2009.



Students participate in Space Day 2009 at the Texas Capitol.